CLAIMS

What is claimed is:

1. A stacked cushion comprising:

(a) a first cushioning element and a second cushioning element stacked together in sequence to form a stacked cushion,

(b) said stacked cushion having a stacked cushion bottom;

(c) said first cushioning element including

(i) a quantity of first gel cushioning medium formed to have a first cushioning element top, a first cushioning element bottom, and a first outer periphery, said first gel cushioning medium being compressible so that it will deform under the compressive force of a cushioned object;

(ii) wherein said first gel cushioning media is flexible and resilient, having shape memory and being substantially solid and non-flowable at temperatures below 130 degrees Fahrenheit;

(iii) a plurality of first hollow columns formed in said first gel cushioning medium, each of said first hollow columns having a first longitudinal axis along its length, each of said first hollow columns having a first column wall which defines a first hollow column interior, and each of said first hollow columns having two ends;

(iv) wherein each of said first column ends is positioned at two different points of said first longitudinal axis;

(v) wherein at least one of said first hollow columns of said first cushioning element is positioned within said first gel cushioning medium such that said first longitudinal axis is positioned generally parallel to the direction of a compressive

force exerted on the stacked cushion by a cushioned object in contact with the stacked cushion;

(c) wherein the stacked cushion is adapted to have a cushioned object placed in contact with said stacked cushion top; and

(d) wherein at least one of said first column walls of said first cushioning element is capable of buckling beneath a protuberance that is located on the cushioned object.

2. A stacked cushion as recited in claim 1, said stacked sequence comprising said first cushioning element beneath said second cushioning element.

3. A stacked cushion as recited in claim 1, said stacked sequence comprising said first cushioning element on top of said second cushioning element.

4. A stacked cushion as recited in claim 1, said stacked sequence comprising said first cushioning element in between at least two of said second cushioning elements.

5. A stacked cushion as recited in claim 1 further comprising a quilted top covering an area of the stacked cushion including said stacked cushion top.

6. A stacked cushion as recited in claim 5, said quilted top including fiber.

7. A stacked cushion as recited in claim 5, said quilted top including foam.

8. A stacked cushion as recited in claim 1 further comprising a latex foam rubber topper covering an area of the stacked cushion including said stacked cushion top.

9. A stacked cushion as recited in claim 1, said first hollow columns formed in said first gel cushioning medium formed as short columns.

10. A stacked cushion as recited in claim 1, said first hollow columns formed in said first gel cushioning medium formed as tall columns.

11. A stacked cushion as recited in claim 1, said first column walls having dimensions comprising six inches in length, one tenth inch thick, and a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns forms a square.

12. A stacked cushion as recited in claim 1, said first column walls having dimensions comprising two inches in length, one hundred twenty five thousandths of an inch thick, and a cross section of each of said first hollow columns taken orthogonal to said longitudinal axis of said first hollow columns forms a square.

13. A stacked cushion as recited in claim 1, said second cushioning element is selected from the group consisting of a quilted top, a foam rubber topper, a foam pad, a polyurethane foam pad, a latex foam pad, a pillow soft polyurethane foam pad, a high grade visco foam slab, a gel cushioning medium pad, and a coil spring pad.

14. A stacked cushion as recited in claim 1, wherein a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns has a shape selected from the group consisting of triangular, square, rectangular, pentagonal, heptagonal, octagonal, round, oval, and n-sided polygonal where n is an integer.

15. A stacked cushion as recited in claim 1, said first cushioning element comprising a first void space calculated by dividing the summed volume of said first hollow column interiors by the volume defined by said first cushioning element top, said first cushioning element bottom, and said first outer periphery, said first void space being at least 0.30.

16. A stacked cushion as recited in claim 1, the stacked cushion adapted for use in beds, mattressing, operating table pads, stretcher cushions, sofas, chairs, wheelchair seat cushions, vehicle seats, bicycle seats, forklift seats, truck seats, car seats, lawnmower seats, motorcycle seats, tractor seats, boat seats, plane seats, or train seats.

17. A stacked cushion as recited in claim 1, said second cushioning element comprising:

(a) a quantity of other gel cushioning medium formed to have an other cushioning element top, an other cushioning element bottom, and an other outer periphery, said other gel cushioning medium being compressible so that it will deform under the compressive force of a cushioned object;

(b) wherein said other gel cushioning media is flexible and resilient, having shape memory and being substantially solid and non-flowable at temperatures below 130 degrees Fahrenheit;

(c) a plurality of other hollow columns formed in said other gel cushioning medium, each of said other hollow columns having an other longitudinal axis along its length, each of said other hollow columns having an other column wall which defines an other hollow column interior, and each of said other columns having two ends;

(d) wherein each of said other column ends is positioned at two different points of said other column axis;

(e) wherein at least one of said other hollow columns of said second cushioning element is positioned within said other gel cushioning medium such that said other longitudinal axis is positioned generally parallel to the direction of a compressive force exerted on the stacked cushion by a cushioned object in contact with the stacked cushion;

(f) wherein the stacked cushion is adapted to have a cushioned object placed in contact with said stacked cushion top; and

(g) wherein at least one of said other column walls of said second cushioning element is capable of buckling beneath a protuberance that is located on the cushioned object.

18. A stacked cushion as recited in claim 17, said other hollow columns formed in said other gel cushioning medium formed as short columns.

19. A stacked cushion as recited in claim 17, said other hollow columns formed in said other gel cushioning medium formed as tall columns.

20. A stacked cushion as recited in claim 17, said other column walls having dimensions comprising not less than about, six inches in length, not less than about one tenth inch thick, and a cross section of each of said other hollow columns taken orthogonal to said other longitudinal axis of said other hollow columns forms a square with not less than about one and eight tenths inch sides.

21. A stacked cushion as recited in claim 17, said other column walls having dimensions of not less than about two inches in length, not less than about one hundred twenty five thousandths of an inch thick, and a cross section of each of said other hollow columns taken orthogonal to said other longitudinal axis of said other hollow columns forms a square with not less than about one inch sides.

22. A stacked cushion as recited in claim 17, wherein a cross section of each of said other hollow columns taken orthogonal to said other longitudinal axis of said other hollow columns has a shape selected from the group consisting of triangular, square, rectangular, pentagonal, heptagonal, octagonal, round, oval, and n-sided polygonal where n is an integer.

23. A stacked cushion as recited in claim 17, said second cushioning element comprising an other void space calculated by dividing the summed volume of said other hollow column interiors by the volume defined by said other cushioning element top, said other cushioning element bottom, and said other outer periphery, said other void space being at least 0.30.

24. A stacked cushion comprising:

(a) A first cushioning element, at least second a cushioning element, a stacked cushion top and a stacked cushion bottom, said first cushioning element and said second cushioning element in stacked sequence;

(b) said first cushioning element including

(i) a quantity of first gel cushioning medium formed to have a first cushioning element top, a first cushioning element bottom, and a first outer periphery, said first gel cushioning medium being compressible so that it will deform under the compressive force of a cushioned object;

(ii) wherein said first gel cushioning media is flexible and resilient, having shape memory and being substantially solid and non-flowable at temperatures below 130 degrees Fahrenheit;

(iii) a plurality of first hollow columns formed in said first gel cushioning medium, each of said first hollow columns having a first longitudinal axis along its length, each of said first hollow columns having a first column wall which defines a first hollow column interior, and each of said first hollow columns having two ends;

(iv) wherein each of said first column ends is positioned at two different points of said first longitudinal axis;

(v) wherein at least one of said first hollow columns of said first cushioning element is positioned within said first gel cushioning medium such that said first longitudinal axis is positioned generally parallel to the direction of a compressive force exerted on the stacked cushion by a cushioned object in contact with the stacked cushion;

(vi) wherein the stacked cushion is adapted to have a cushioned object placed in contact with said stacked cushion top; and

(vii) wherein at least one of said first column walls of said first cushioning element is capable of buckling beneath a protuberance that is located on the cushioned object;

(c) said second cushioning element selected from the group consisting of a quilted top, a foam rubber topper, a foam pad, a polyurethane foam pad, a latex foam pad, a pillow soft polyurethane foam pad, a high grade visco foam slab, a gel cushioning medium pad, and a coil spring element.

25. A stacked cushion as recited in claim 24, said stacked sequence comprising said first cushioning element beneath said second cushioning element.

26. A stacked cushion as recited in claim 24, said stacked sequence comprising said first cushioning element on top of said second cushioning element.

27. A stacked cushion as recited in claim 24, said stacked sequence comprising said first cushioning element in between at least two of said second cushioning element.

28. A stacked cushion as recited in claim 24 further comprising a quilted top covering an area of the stacked cushion including said stacked cushion top.

29. A stacked cushion as recited in claim 24, said quilted top including fiber.

30. A stacked cushion as recited in claim 24, said quilted top including foam.

31. A stacked cushion as recited in claim 24 further comprising a latex foam rubber topper covering an area of the stacked cushion including said stacked cushion top.

32. A stacked cushion as recited in claim 24, said first hollow columns formed in said first gel cushioning medium formed as short columns.

33. A stacked cushion as recited in claim 24, said first hollow columns formed in said first gel cushioning medium formed as tall columns.

34. A stacked cushion as recited in claim 24, said first column walls having dimensions of not less than about six inches in length, not less than about one tenth inch thick, and a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns forms a square with not less than about one inch sides.

35. A stacked cushion as recited in claim 24, said first column walls having dimensions of not less than about two inches in length, not less than about one hundred twenty five thousandths of an inch thick, and a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns forms a square with not less than about one inch sides.

36. A stacked cushion as recited in claim 24, wherein a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns has a shape selected from the group consisting of triangular, square,

rectangular, pentagonal, heptagonal, octagonal, round, oval, and n-sided polygonal where n is an integer.

37. A stacked cushion as recited in claim 24, said first cushioning element comprising a first void space calculated by dividing the summed volume of said first hollow column interiors by the volume defined by said first cushioning element top, said first cushioning element bottom, and said first outer periphery, said first void space being at least 0.30.

38. A stacked cushion as recited in claim 24, the stacked cushion adapted for use in beds, mattressing, operating table pads, stretcher cushions, sofas, chairs, wheelchair seat cushions, vehicle seats, bicycle seats, forklift seats, truck seats, car seats, lawnmower seats, motorcycle seats, tractor seats, boat seats, plane seats, or train seats.

39. A stacked cushion comprising:

(a) a first cushioning element, at least a second cushioning element, a stacked cushion top and a stacked cushion bottom, said first cushioning element and said second cushioning element in stacked sequence;

(b) said first cushioning element including

(i) a quantity of first gel cushioning medium formed to have a first cushioning element top, a first cushioning element bottom, and a first outer periphery, said first gel cushioning medium being compressible so that it will deform under the compressive force of a cushioned object;

(ii) wherein said cushioning media is flexible and resilient, having shape memory and being substantially solid and non-flowable at temperatures below 130 degrees Fahrenheit;

(iii) a plurality of first hollow columns formed in said first gel cushioning medium, each of said first hollow columns having a first longitudinal axis along its length, each of said first hollow columns having a first column wall which defines a first hollow column interior, and each of said first hollow columns having two ends;

(iv) wherein each of said first column ends is positioned at two different points of said first longitudinal axis;

(v) wherein at least one of said first hollow columns of said first cushioning element is positioned within said first gel cushioning medium such that said first longitudinal axis is positioned generally parallel to the direction of a compressive force exerted on the stacked cushion by a cushioned object in contact with the stacked cushion;

(vi) wherein the stacked cushion is adapted to have a cushioned object placed in contact with said stacked cushion top; and

(vii) wherein at least one of said first column walls of said first cushioning element is capable of buckling beneath a protuberance that is located on the cushioned object;

(c) said second cushioning element including:

(i) a quantity of other gel cushioning medium formed to have an other cushioning element top, an other cushioning element bottom, and an other outer periphery, said other gel cushioning medium being compressible so that it will deform under the compressive force of a cushioned object;

(ii) wherein said other gel cushioning media is flexible and resilient, having shape memory and being substantially solid and non-flowable at temperatures below 130 degrees Fahrenheit;

(iii) a plurality of other hollow columns formed in said other gel cushioning medium, each of said other hollow columns having an other longitudinal axis along its length, each of said other hollow columns having an other column wall which defines an other hollow column interior, and each of said other hollow columns having two ends;

(iv) wherein each of said other column ends is positioned at two different points of said other longitudinal axis;

(v) wherein at least one of said other hollow columns of said second cushioning element is positioned within said other gel cushioning medium such that said other longitudinal axis is positioned generally parallel to the direction of a compressive force exerted on the stacked cushion by a cushioned object in contact with the stacked cushion;

(vi) wherein the stacked cushion is adapted to have a cushioned object placed in contact with said stacked cushion top; and

(vii) wherein at least one of said other column walls of said second cushioning element is capable of buckling beneath a protuberance that is located on the cushioned object.

40. A stacked cushion as recited in claim 39, said stacked sequence comprising said first cushioning element beneath said second cushioning element.

41. A stacked cushion as recited in claim 39, said stacked sequence comprising said first cushioning element on top of said second cushioning element.

42. A stacked cushion as recited in claim 39, said stacked sequence comprising said first cushioning element in between at least two of said second cushioning element.

43. A stacked cushion as recited in claim 39 further comprising a quilted top covering an area of the stacked cushion including said stacked cushion top.

44. A stacked cushion as recited in claim 39, said quilted top including fiber.

45. A stacked cushion as recited in claim 39, said quilted top including foam.

46. A stacked cushion as recited in claim 39 further comprising a latex foam rubber topper covering an area of the stacked cushion including said stacked cushion top.

47. A stacked cushion as recited in claim 39, said first hollow columns formed in said first gel cushioning medium formed as short columns.

48. A stacked cushion as recited in claim 39, said first hollow columns formed in said first gel cushioning medium formed as tall columns.

49. A stacked cushion as recited in claim 39, said first column walls having dimensions six inches in length, one tenth inch thick, and a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns forms a square with one and eight tenths inch sides.

50. A stacked cushion as recited in claim 39, said first column walls having dimension comprising two inches in length, one hundred twenty five thousandths of an inch thick, and a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns forms a square with one inch sides.

51. A stacked cushion as recited in claim 39, said other hollow columns formed in said other gel cushioning medium formed as short columns.

52. A stacked cushion as recited in claim 39, said other hollow columns formed in said other gel cushioning medium formed as tall columns.

53. A stacked cushion as recited in claim 39, said other column walls having dimension comprising six inches in length, one tenth inch thick, and a cross section of each of said other hollow columns taken orthogonal to said other longitudinal axis of said other hollow columns forms a square with one and eight tenths inch sides.

54. A stacked cushion as recited in claim 39, said other column walls having dimensions comprising two inches in length, one hundred twenty five thousandths of an inch thick, and a cross section of each of said other hollow columns taken orthogonal to said other longitudinal axis of said other hollow columns forms a square with one inch sides.

55. A stacked cushion as recited in claim 39, wherein a cross section of each of said first hollow columns taken orthogonal to said first longitudinal axis of said first hollow columns has a shape selected from the group consisting of triangular, square, rectangular, pentagonal, heptagonal, octagonal, round, oval, and n-sided polygonal where n is an integer.

56. A stacked cushion as recited in claim 39, wherein a cross section of each of said other hollow columns taken orthogonal to said other longitudinal axis of said other hollow columns has a shape selected from the group consisting of triangular, square, rectangular, pentagonal, heptagonal, octagonal, round, oval, and n-sided polygonal where n is an integer.

57. A stacked cushion as recited in claim 39, said first cushioning element comprising a first void space calculated by dividing the summed volume of said first hollow column interiors by the volume defined by said first cushioning element top, said first cushioning element bottom, and said first outer periphery, said first void space being at least about 0.30.

58. A stacked cushion as recited in claim 39, said second cushioning element comprising an other void space calculated by dividing the summed volume of said other hollow column interiors by the volume defined by said other cushioning element top, said other cushioning element bottom, and said other outer periphery, said other void space being at least about 0.30.

59. A stacked cushion as recited in claim 39, the stacked cushion adapted for use in beds, mattressing, operating table pads, stretcher cushions, sofas, chairs, wheelchair seat cushions, vehicle seats, bicycle seats, forklift seats, truck seats, car seats,

lawnmower seats, motorcycle seats, tractor seats, boat seats, plane seats, or train seats.

60. A two-part cushion comprising:

(a) a first cushioning and a second cushioning element in cooperative engagement with each other,

(b) said first cushioning element including a quantity of elastomeric gel that is non-flowable at room temperature formed into a shape that includes buckling columns that can buckle under a compressive force in order to support a cushioned object.

61. A cushion as recited in claim 60 wherein said second cushioning element includes foam.

62. A cushion as recited in claim 60 wherein said second cushioning element includes at least one spring.